

Order Number

## **Analytical Laboratory**

13339 Hagers Ferry Road Huntersville, NC 28078-7929 McGuire Nuclear Complex - MG03A2 Phone: 980-875-5245 Fax: 980-875-4349

### **Order Summary Report**

Older Number.	313020233			
Project Name:	Wastewater Nietering			
Customer Name(s):	Bill K., Ron L., Don S., Ray L.			
Customer Address:	253 Plant Allen Road			
	Belmont, NC 28012			
Lab Contact:	Jason C Perkins	Phone:	980-875-5348	
Report Authorized By:		Dat	te:	3/12/2013
(Signature)	Jason C Perkins			

### **Program Comments:**

Please contact the Program Manager (Jason C Perkins) with any guestions regarding this report.

112020225

### **Data Flags & Calculations:**

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted. Subcontracted data included on the Duke Certificate of Analysis is to be used as information only. Certified vendor results can be found in the subcontracted lab final report. Duke Energy Analytical Laboratory subcontracts analyses to other vendor laboratories that have been qualified by Duke Energy to perform these analyses except where noted.

#### Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

#### Certification:

The Analytical Laboratory holds the following State Certifications: North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

## Sample ID's & Descriptions:

Page 2 of 38

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2013003664	ALLEN	08-Feb-13 7:30 AM	CRAIG McHUGH	FGD Purge Eff
2013003665	ALLEN	08-Feb-13 7:40 AM		EQ Tank Eff
2013003666	ALLEN	08-Feb-13 8:20 AM		BioReactor 1 Inf
2013003667	ALLEN	08-Feb-13 8:22 AM		BioReactor 1 Inf BLANK
2013003668	ALLEN	08-Feb-13 8:25 AM		BioReactor 2 Inf
2013003669	ALLEN	08-Feb-13 8:27 AM		BioReactor 2 Inf BLANK
2013003670	ALLEN	08-Feb-13 8:30 AM		BioReactor 2 Eff
2013003671	ALLEN	08-Feb-13 8:32 AM		BioReactor 2 Eff BLANK
2013003672	ALLEN	08-Feb-13 9:00 AM		Filter Blk
2013003672 9 Total Samples	ALLEN	08-Feb-13 9:00 AM		ı

### **Technical Validation Review**

### **Checklist:**

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).

All Results are less than the laboratory reporting limits. □ Yes ✓ No

All laboratory QA/QC requirements are acceptable. ✓ Yes □ No

### **Report Sections Included:**

Reviewed By:

**DBA Account** 

✓ Job Summary Report	✓ Sub-contracted Laboratory Results
✓ Sample Identification	☐ Customer Specific Data Sheets, Reports, & Documentation
✓ Technical Validation of Data Package	Customer Database Entries
✓ Analytical Laboratory Certificate of Analysis	✓ Chain of Custody
☐ Analytical Laboratory QC Report	✓ Electronic Data Deliverable (EDD) Sent Separately

Date:

3/12/2013

This report shall not be reproduced, except in full.

### Order # J13020235

Site: FGD Purge Eff Sample #: 2013003664

Collection Date: 08-Feb-13 7:30 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
ALKALINITY - (Analysis Perform	ed by Prism Lab	<u>s)</u>						
Vendor Parameter	Complete					Vendor Method		V_PRISM
INORGANIC IONS BY IC								
Bromide	38	mg/L		10	100	EPA 300.0	02/15/2013 17:50	JAHERMA
Chloride	2800	mg/L		100	1000	EPA 300.0	02/15/2013 17:50	JAHERMA
Sulfate	2100	mg/L		100	1000	EPA 300.0	02/15/2013 17:50	JAHERMA
MERCURY (COLD VAPOR) IN W	ATER							
Mercury (Hg)	47.2	ug/L		2.5	50	EPA 245.1	02/21/2013 13:25	AGIBBS
DISSOLVED METALS BY ICP								
Manganese (Mn)	1.44	mg/L		0.05	10	EPA 200.7	02/18/2013 11:53	MHH7131
TOTAL RECOVERABLE METAL	S BY ICP							
Boron (B)	322	mg/L		0.5	10	EPA 200.7	02/19/2013 12:10	MHH7131
Calcium (Ca)	1890	mg/L		0.1	10	EPA 200.7	02/19/2013 12:10	MHH7131
Iron (Fe)	132	mg/L		0.1	10	EPA 200.7	02/19/2013 12:10	MHH7131
Magnesium (Mg)	1090	mg/L		0.05	10	EPA 200.7	02/19/2013 12:10	MHH7131
Manganese (Mn)	7.37	mg/L		0.05	10	EPA 200.7	02/19/2013 12:10	MHH7131
DISSOLVED METALS BY ICP-M	<u>s</u>							
Selenium (Se)	294	ug/L		10	10	EPA 200.8	03/04/2013 14:17	KRICHAR
TOTAL RECOVERABLE METAL	S BY ICP-MS							
Arsenic (As)	224	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Chromium (Cr)	199	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Copper (Cu)	150	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Nickel (Ni)	240	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Selenium (Se)	904	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
Zinc (Zn)	355	ug/L		10	10	EPA 200.8	03/05/2013 12:12	KRICHAR
SELENIUM SPECIATION - (Anal	ysis Performed b	y Applied	Speciation a	nd Cons	ulting, LLC	<u>:)</u>		
Vendor Parameter	Complete					Vendor Method		V_AS&C
TOTAL DISSOLVED SOLIDS								
TDS	11000	mg/L		200	1	SM2540C	02/18/2013 16:38	SWILLI3
TOTAL SUSPENDED SOLIDS								
TSS	3500	mg/L		250	1	SM2540D	02/14/2013 13:49	SWILLI3

This report shall not be reproduced, except in full.

### Order # J13020235

Site: EQ Tank Eff Sample #: 2013003665

Collection Date: 08-Feb-13 7:40 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
MERCURY (COLD VAPOR)	IN WATER							
Mercury (Hg)	30.3	ug/L		2.5	50	EPA 245.1	02/21/2013 13:27	AGIBBS
DISSOLVED METALS BY I	<u>CP</u>							
Manganese (Mn)	< 0.05	mg/L		0.05	10	EPA 200.7	02/18/2013 11:57	MHH7131
TOTAL RECOVERABLE ME	ETALS BY ICP							
Boron (B)	289	mg/L		0.5	10	EPA 200.7	02/19/2013 12:14	MHH7131
Calcium (Ca)	1570	mg/L		0.1	10	EPA 200.7	02/19/2013 12:14	MHH7131
Iron (Fe)	73.2	mg/L		0.1	10	EPA 200.7	02/19/2013 12:14	MHH7131
Magnesium (Mg)	970	mg/L		0.05	10	EPA 200.7	02/19/2013 12:14	MHH7131
Manganese (Mn)	4.11	mg/L		0.05	10	EPA 200.7	02/19/2013 12:14	MHH7131
DISSOLVED METALS BY I	CP-MS							
Selenium (Se)	284	ug/L		10	10	EPA 200.8	03/04/2013 14:20	KRICHAR
TOTAL RECOVERABLE ME	ETALS BY ICP-MS							
Arsenic (As)	136	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Chromium (Cr)	134	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Copper (Cu)	99.7	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Nickel (Ni)	177	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Selenium (Se)	627	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR
Zinc (Zn)	241	ug/L		10	10	EPA 200.8	03/05/2013 12:15	KRICHAR

Site: BioReactor 1 Inf Sample #: 2013003666

Collection Date: 08-Feb-13 8:20 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
ALKALINITY - (Analysis Performed	d by Prism Labs	<u>)</u>						
Vendor Parameter	Complete					Vendor Method		V_PRISM
MERCURY 1631 - (Analysis Perfor	med by Brooks	Rand La	bs LLC)					
Vendor Parameter	Complete					Vendor Method		V_BRAND
MERCURY 1631 - DISSOLVED - (A	Analysis Perform	ed by Br	ooks Rand L	abs LLC)				
Vendor Parameter	Complete					Vendor Method		V_BRAND
DISSOLVED METALS BY ICP								
Manganese (Mn)	< 0.05	mg/L		0.05	10	EPA 200.7	02/18/2013 12:00	MHH7131

This report shall not be reproduced, except in full.

### Order # J13020235

Site: BioReactor 1 Inf Sample #: 2013003666

Collection Date: 08-Feb-13 8:20 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS B	Y ICP							
Boron (B)	247	mg/L		0.5	10	EPA 200.7	02/19/2013 12:18	MHH7131
Calcium (Ca)	1490	mg/L		0.1	10	EPA 200.7	02/19/2013 12:18	MHH7131
Iron (Fe)	< 0.1	mg/L		0.1	10	EPA 200.7	02/19/2013 12:18	MHH7131
Magnesium (Mg)	803	mg/L		0.05	10	EPA 200.7	02/19/2013 12:18	MHH7131
Manganese (Mn)	< 0.05	mg/L		0.05	10	EPA 200.7	02/19/2013 12:18	MHH7131
DISSOLVED METALS BY ICP-MS								
Selenium (Se)	247	ug/L		10	10	EPA 200.8	03/04/2013 14:23	KRICHAR
TOTAL RECOVERABLE METALS B	Y ICP-MS							
Arsenic (As)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Chromium (Cr)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Copper (Cu)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Nickel (Ni)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Selenium (Se)	284	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Silver (Ag)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR
Zinc (Zn)	< 10	ug/L		10	10	EPA 200.8	03/05/2013 12:18	KRICHAR

SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)

Vendor Parameter Complete Vendor Method V\_AS&C

Site: BioReactor 1 Inf BLANK Sample #: 2013003667

Collection Date: 08-Feb-13 8:22 AM Matrix: OTHER

Analyte Result Units Qualifiers RDL DF Method Analysis Date/Time Analyst

MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)

Vendor Parameter Complete Vendor Method V\_BRAND

MERCURY 1631 - DISSOLVED - (Analysis Performed by Brooks Rand Labs LLC)

Vendor Parameter Complete Vendor Method V\_BRAND

Site: BioReactor 2 Inf Sample #: 2013003668

Collection Date: 08-Feb-13 8:25 AM Matrix: OTHER

Analyte Result Units Qualifiers RDL DF Method Analysis Date/Time Analyst

**ALKALINITY - (Analysis Performed by Prism Labs)** 

Vendor Parameter Complete Vendor Method V\_PRISM

This report shall not be reproduced, except in full.

### Order # J13020235

Site: BioReactor 2 Inf

Collection Date: 08-Feb-13 8:25 AM

Sample #: 2013003668

Matrix: OTHER

Analyte Result Units Qualifiers **RDL** DF Method **Analysis Date/Time** Analyst MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC) Vendor Parameter Vendor Method V\_BRAND Complete MERCURY 1631 - DISSOLVED - (Analysis Performed by Brooks Rand Labs LLC) Vendor Parameter Complete Vendor Method V\_BRAND **DISSOLVED METALS BY ICP** 0.05 Manganese (Mn) < 0.05 mg/L 10 EPA 200.7 02/18/2013 12:04 MHH7131 **TOTAL RECOVERABLE METALS BY ICP** Boron (B) 241 mg/L 0.5 10 EPA 200.7 02/19/2013 12:21 MHH7131 Calcium (Ca) 1510 mg/L 0.1 10 EPA 200.7 02/19/2013 12:21 MHH7131 EPA 200.7 02/19/2013 12:21 MHH7131 Iron (Fe) < 0.1 mg/L 0.1 10 02/19/2013 12:21 Magnesium (Mg) 807 0.05 10 EPA 200.7 MHH7131 mg/L Manganese (Mn) < 0.05 mg/L 0.05 10 EPA 200.7 02/19/2013 12:21 MHH7131 **DISSOLVED METALS BY ICP-MS** Selenium (Se) 157 ug/L 10 10 EPA 200.8 03/04/2013 14:27 **KRICHAR TOTAL RECOVERABLE METALS BY ICP-MS** EPA 200.8 03/05/2013 12:22 **KRICHAR** Arsenic (As) < 10 ug/L 10 10 Cadmium (Cd) ug/L 10 10 EPA 200.8 03/05/2013 12:22 **KRICHAR** < 10 Chromium (Cr) 10 EPA 200.8 03/05/2013 12:22 **KRICHAR** < 10 ug/L 10 Copper (Cu) ug/L 10 10 EPA 200.8 03/05/2013 12:22 **KRICHAR** < 10 ug/L EPA 200.8 Nickel (Ni) < 10 10 10 03/05/2013 12:22 **KRICHAR** Selenium (Se) 155 ug/L 10 10 EPA 200.8 03/05/2013 12:22 **KRICHAR** 

### SELENIUM SPECIATION - (Analysis Performed by Applied Speciation and Consulting, LLC)

< 10

< 10

Silver (Ag)

Zinc (Zn)

Vendor Parameter Complete Vendor Method V\_AS&C

10

10

10

EPA 200.8

EPA 200.8

03/05/2013 12:22

03/05/2013 12:22

**KRICHAR** 

**KRICHAR** 

Site: BioReactor 2 Inf BLANK Sample #: 2013003669

Collection Date: 08-Feb-13 8:27 AM Matrix: OTHER

ug/L

ug/L

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
MERCURY 1631 - (Analysis Perfo	rmed by Brooks	Rand La	bs LLC)					
Vendor Parameter	Complete					Vendor Method		V_BRAND

MERCURY 1631 - DISSOLVED - (Analysis Performed by Brooks Rand Labs LLC)

Vendor Parameter Complete Vendor Method V\_BRAND

This report shall not be reproduced, except in full.

### Order # J13020235

Site: BioReactor 2 Eff Sample #: 2013003670

Collection Date: 08-Feb-13 8:30 AM Matrix: OTHER

Vendor Parameter

Complete

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
ALKALINITY - (Analysis Pe	rformed by Prism Lab	<u>s)</u>						
Vendor Parameter	Complete					Vendor Method		V_PRISM
INORGANIC IONS BY IC								
Bromide	75	mg/L		10	100	EPA 300.0	02/15/2013 18:09	JAHERMA
Chloride	3000	mg/L		100	1000	EPA 300.0	02/15/2013 18:09	JAHERMA
Sulfate	2200	mg/L		100	1000	EPA 300.0	02/15/2013 18:09	JAHERMA
MERCURY 1631 - (Analysis	Performed by Brooks	s Rand La	bs LLC)					
Vendor Parameter	Complete					Vendor Method		V_BRAND
MERCURY 1631 - DISSOLV	<u> 'ED - (Analysis Perfor</u>	med by B	rooks Rand L	abs LLC	)			
Vendor Parameter	Complete					Vendor Method		V_BRAND
DISSOLVED METALS BY IC	<u>CP</u>							
Manganese (Mn)	< 0.05	mg/L		0.05	10	EPA 200.7	02/18/2013 12:08	MHH7131
TOTAL RECOVERABLE ME	ETALS BY ICP							
Boron (B)	258	mg/L		0.5	10	EPA 200.7	02/19/2013 12:25	MHH7131
Calcium (Ca)	1480	mg/L		0.1	10	EPA 200.7	02/19/2013 12:25	MHH7131
Iron (Fe)	< 0.1	mg/L		0.1	10	EPA 200.7	02/19/2013 12:25	MHH7131
Magnesium (Mg)	788	mg/L		0.05	10	EPA 200.7	02/19/2013 12:25	MHH7131
Manganese (Mn)	< 0.05	mg/L		0.05	10	EPA 200.7	02/19/2013 12:25	MHH7131
DISSOLVED METALS BY IC	CP-MS							
Selenium (Se)	< 5	ug/L		5	5	EPA 200.8	03/04/2013 14:30	KRICHAR
TOTAL RECOVERABLE ME	ETALS BY ICP-MS							
Arsenic (As)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Cadmium (Cd)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Chromium (Cr)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Copper (Cu)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Nickel (Ni)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Selenium (Se)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Silver (Ag)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
Zinc (Zn)	< 5	ug/L		5	5	EPA 200.8	03/05/2013 12:50	KRICHAR
SELENIUM SPECIATION - (	Analysis Performed b	y Applied	Speciation a	nd Cons	ulting, LLC	<u>c)</u>		
Vandar Baranatar	0	<u> </u>				Math		V AC8C

Vendor Method

V\_AS&C

This report shall not be reproduced, except in full.

### Order # J13020235

Site: BioReactor 2 Eff BLANK Sample #: 2013003671

Collection Date: 08-Feb-13 8:32 AM Matrix: OTHER

Analyte Result Units Qualifiers RDL DF Method Analysis Date/Time Analyst

MERCURY 1631 - (Analysis Performed by Brooks Rand Labs LLC)

Vendor Parameter Complete Vendor Method V\_BRAND

MERCURY 1631 - DISSOLVED - (Analysis Performed by Brooks Rand Labs LLC)

Vendor Parameter Complete Vendor Method V\_BRAND

Site: Filter Blk Sample #: 2013003672

Collection Date: 08-Feb-13 9:00 AM Matrix: OTHER

Analyte	Result	Units Qualifie	rs RDL	DF	Method	Analysis Date/Time	Analyst
DISSOLVED METALS BY ICP							
Manganese (Mn)	< 0.005	mg/L	0.005	1	EPA 200.7	02/18/2013 11:09	MHH7131
DISSOLVED METALS BY ICP-MS							
Selenium (Se)	< 1	ug/L	1	1	EPA 200.8	03/04/2013 13:48	KRICHAR



18804 Northcreek Parkway Bothell, WA, 98011 Tel: (425) 483-3300 Fax: (425) 483-9818 www.appliedspeciation.com

February 25, 2013

Jay Perkins Duke Energy Analytical Laboratory Mail Code MGO3A2 (Building 7405) 13339 Hagers Ferry Rd. Huntersville, NC 28078 (704) 875-5245

Project: Allen Wastewater - Nietering (January 2013 - Test Burn) (LIMS #J13020235)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation on February 14, 2013. The samples were received in a sealed cooler at 0.3°C on February 15, 2013. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

Russell Gerads Vice President

Applied Speciation and Consulting, LLC

### Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins Duke Energy Analytical Laboratory Mail Code MGO3A2 (Building 7405) 13339 Hagers Ferry Rd. Huntersville, NC 28078

Project: Allen Wastewater - Nietering (January 2013 - Test Burn) (LIMS #J13020235)

February 25, 2013

### 1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on February 14, 2013. The samples were received on February 15, 2013 in a sealed container at 0.3°C.

The samples were received in a laminar flow clean hood, void of trace metals contamination and ultra-violet radiation, and were designated discrete sample identifiers. An aliquot of each sample was filtered (0.45µm) and each filtrate was stored in a secure, monitored cryofreezer (maintained at a temperature of -80°C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS).

### 2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

<u>Selenium Speciation Analysis by IC-ICP-CRC-MS</u> Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into an autosampler vial. No further sample preparation was performed as any chemical alteration of a sample may shift the equilibrium of the system, resulting in changes in speciation ratios.

### 3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of

each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimum interval of every ten analytical runs.

<u>Selenium Speciation Analysis by IC-ICP-CRC-MS</u> Each sample for selenium speciation analysis was analyzed by ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS) on February 22, 2013. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic (pH > 7) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (CRC) containing a reaction gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

### 4. Analytical Issues

The overall analyses went well and no significant analytical issues were encountered. All quality control parameters associated with the samples were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

Russell Gerads Vice President

Applied Speciation and Consulting, LLC

# Selenium Speciation Results for Duke Energy Project Name: Allen Wastewater - Nietering (January 2013 - Test Burn) Contact: Jay Perkins LIMS #J13020235

Date: February 25, 2013
Report Generated by: Russell Gerads
Applied Speciation and Consulting, LLC

### Sample Results

						Unknown Se
Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Species (n)
FGD Purge Eff	36.1	212	ND (<2.5)	ND (<2.6)	ND (<2.6)	0.0 (0)
BioReactor 1 Inf	17.1	212	ND (<0.63)	1.58	ND (<0.65)	0.0 (0)
BioReactor 2 Inf	114	24.2	ND (<0.63)	3.91	ND (<0.65)	1.17 (1)
BioReactor 2 Eff	2.21	ND (<0.59)	ND (<0.63)	ND (<0.65)	ND (<0.65)	0.0 (0)

All results reflect the applied dilution and are reported in µg/L

ND = Not detected at the applied dilution

SeCN = Selenocyanate

MeSe(IV) = Methylseleninic acid

SeMe = Selenomethionine

Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS

# Selenium Speciation Results for Duke Energy Project Name: Allen Wastewater - Nietering (January 2013 - Test Burn) Contact: Jay Perkins LIMS #J13020235

Date: February 25, 2013 Report Generated by: Russell Gerads Applied Speciation and Consulting, LLC

### **Quality Control Summary - Preparation Blank Summary**

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL*	eMDL 250x	eMDL 1000x
Se(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.73	2.9
Se(VI)	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.59	2.4
SeCN	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.63	2.5
MeSe(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.65	2.6
SeMe	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.65	2.6

eMDL = Estimated Method Detection Limit

### **Quality Control Summary - Certified Reference Materials**

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	9.57	100.0
Se(VI)	LCS	9.48	9.20	97.0
SeCN	LCS	8.92	8.90	99.8
MeSe(IV)	LCS	6.47	6.05	93.5
SeMe	LCS	9.32	8.78	94.2

<sup>\*</sup>Please see narrative regarding eMDL calculations

# Selenium Speciation Results for Duke Energy Project Name: Allen Wastewater - Nietering (January 2013 - Test Burn) Contact: Jay Perkins LIMS #J13020235

Date: February 25, 2013 Report Generated by: Russell Gerads Applied Speciation and Consulting, LLC

### **Quality Control Summary - Matrix Duplicates**

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	Batch QC	ND (<2.9)	ND (<2.9)	NC	NC
Se(VI)	Batch QC	428.1	446.3	437.2	4.2
SeCN	Batch QC	ND (<2.5)	ND (<2.5)	NC	NC
MeSe(IV)	Batch QC	ND (<2.6)	ND (<2.6)	NC	NC
SeMe	Batch QC	ND (<2.6)	ND (<2.6)	NC	NC

ND = Not detected at the applied dilution

NC = Value was not calculated due to one or more concentrations below the eMDL

### Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	Batch QC	5560	5869	105.5	5560	5908	106.3	0.7
Se(VI)	Batch QC	5045	5740	105.1	5045	5775	105.8	0.6
SeCN	Batch QC	4575	4809	105.1	4575	4846	105.9	8.0

3013 22Requested Turnaround Add. Cost Will Apply Vendor 14 Days \_X ORIGINAL to LAB. COPY to CLIENT DISTRIBUTION 19Page 1 of 2 Fifter Fe and Mn in the field Return kit to Robbin Jolly Nitrate-nitrite, D\_NOS/NO2 2,4 D 21 Days 7 Days Bromide, - Dionex Chloride, Sulfate meinq\_V Other UST RCRA alkalinity, total (4.5), pH -Ground Water bicarbonate alkalinity Carbonate alkalinity. NPOES Please indicate desired turnaround TNATRO9MI, 19moteu J -Se, Speciation, V\_ASC > SAMPLE PROGRAM Waste -CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM Se (MS) filered Drinking Water \* q. 130726 \*\* r. 34S gH + slateM -930 9--Analytical Laboratory Use Only \*\* Hg 245.1 on these 2 samples Date/Time Date/Time Date/Firm SST, SQT Cooler Temp (C) 2/13 0808 15 Preserv.:1=HCL 2=H,SO<sub>4</sub> 3=HNO<sub>8</sub> Grab Required 5=None sesylanA<sup>81</sup> Matrix OTHER Comp Craix Mr Sugh ided areas rais Mcking Crais, M. Hugh rang Meklery Crais Michigh ans Meldus ous Mellung Crais Mc Hugh rais Welling omplete all Signature , Brooks 1 Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn (8) TRM/ICP = B, Ca, Fe, Mg, Mn,(5) PO#133241 **Brooks Rand** 2-8-13 0740 / 7280 PO#141391 PO#144725 2-8-13 0820 0130 0830 88 2.8-13 0827 0822 2280 Time AS&C PRISM 2-8-12 6)Accepted By: 2-8-13 2.8-13 2-8-13 2-8-13 2-8-13 13 Sample Description or ID Duke Energy Analytical Laboratory BioReactor 2 Eff Hg Blk BioReactor 1 Inf Hg Blk BioReactor 2 Inf Hg Blk Mail Code MGO3A2 (Building 7405) BioReactor 2 Eff BioReactor 2 Inf BioReactor 1 Inf FGD Purge Eff 10)Activity ID: 13339 Hagers Ferry Rd Huntersville, N. C. 28078 (704) 875-5245 Filter Blank Wail Code Fax: (704) 875-4349 4)Fax No: EQ Tank n isfe to ris Dabe/Time Date/Time Ron Laws, Robbin Jolly, Bill Kennedy, Allen Wastewater - Nietering BEXHABS (January 2013 - Test Burn) Don Scruggs 8)Account: 9)Process: Se Speciation Bottle MASFFLX Energy AS00 21300360 3) Refinquished By 20130344 2013 C31.N 1) Refinquished By Retinguished By 2013031.91 2013CO366 20121366 2013024 2012026 LAB USE ONLY 2013031 "Lab ID 8)Oper. Unit Client



March 1, 2013

Duke Energy
ATTN: Jay Perkins
Scientific Support-Laboratory
13339 Hagers Ferry Road
Huntersville NC 28078
jcperkins@duke-energy.com
labcustomer@duke-energy.com

RE: Project DUK-HV1201 Client Project: J13020235

Dear Mr. Perkins,

On February 15, 2013, Brooks Rand Labs (BRL) received three (3) wastewater sample and three (3) corresponding field blanks. An aliquot was removed from each sample bottle and filtered into a separate container designed for dissolved mercury (Hg) analysis. The sample volume from the original container was logged-in for total Hg analysis. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Data used for regulatory purposes has a 24 hour filtration holding time requirement. Non-regulatory purposed data has a 48 hour filtration holding time. The samples were received outside of the non-regulatory time limit and results were qualified **H**.

The results were blank-corrected as described in the calculations section of the relevant SOP and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

All data was reported without additional qualification, aside from concentration qualifiers, and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, see the *Report Information* page of the report. Please feel free to contact me if you have any questions.

Sincerely,

Tiffany Stilwater Project Manager

tiffany@brooksrand.com

tilwate



Page 19 of 38 Client PM: Jay Perkins Client PO: 141391

### Report Information

### **Laboratory Accreditation**

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksrand.com/default.asp?contentID=586">http://www.brooksrand.com/default.asp?contentID=586</a>. Results reported relate only to the samples listed in the report.

### **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

#### **Common Abbreviations**

BLK	method blank	MS	matrix spike
BRL	Brooks Rand Labs	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
CRM	certified reference material	RPD	relative percent difference
D	dissolved fraction	RSD	relative standard deviation
DUP	duplicate	SCV	secondary calibration verification
ICV	initial calibration verification	SOP	standard operating procedure
MDL	method detection limit	SRM	standard reference material
MRL	method reporting limit	Т	total recoverable fraction

### **Definition of Data Qualifiers**

(Effective 9/23/09)

- B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- **J** Estimated value. A full explanation is presented in the narrative.
- **J-M** Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- N Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- **X** Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BRL.</u>



Page 20 of 38 Client PM: Jay Perkins Client PO: 141391

# Sample Information

Sample	Lab ID	Report Matrix	Туре	Sampled	Received
BioReactor 1 Inf	1307048-01	Influent	Sample	02/08/2013	02/15/2013
BioReactor 1 Inf	1307048-02	Influent	Sample	02/08/2013	02/15/2013
BioReactor 1 Inf Hg Blk	1307048-03	DIW	Field Blank	02/08/2013	02/15/2013
BioReactor 1 Inf Hg Blk	1307048-04	DIW	Field Blank	02/08/2013	02/15/2013
BioReactor 2 Inf	1307048-05	Influent	Sample	02/08/2013	02/15/2013
BioReactor 2 Inf	1307048-06	Influent	Sample	02/08/2013	02/15/2013
BioReactor 2 Inf Hg Blk	1307048-07	DIW	Field Blank	02/08/2013	02/15/2013
BioReactor 2 Inf Hg Blk	1307048-08	DIW	Field Blank	02/08/2013	02/15/2013
BioReactor 2 Eff	1307048-09	Effluent	Sample	02/08/2013	02/15/2013
BioReactor 2 Eff	1307048-10	Effluent	Sample	02/08/2013	02/15/2013
BioReactor 2 Eff Hg Blk	1307048-11	DIW	Field Blank	02/08/2013	02/15/2013
BioReactor 2 Eff Hg Blk	1307048-12	DIW	Field Blank	02/08/2013	02/15/2013

# **Batch Summary**

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hq	Water	EPA 1631	02/21/2013	02/25/2013	B130292	1300129



Page 21 of 38 Client PM: Jay Perkins Client PO: 141391

# Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
BioReactor 1 I	nf									
1307048-01	Hg	Influent	Т	985		3.79	10.1	ng/L	B130292	1300129
1307048-02	Hg	Influent	D	892	Н	0.76	2.02	ng/L	B130292	1300129
BioReactor 1 I	nf Hg Blk									
1307048-03	Hg	DIW	T	0.15	U	0.15	0.39	ng/L	B130292	1300129
1307048-04	Hg	DIW	D	0.15	H, U	0.15	0.39	ng/L	B130292	1300129
BioReactor 2 E	<b>Eff</b>									
1307048-09	Hg	Effluent	T	80.8		0.15	0.41	ng/L	B130292	1300129
1307048-10	Hg	Effluent	D	20.0	Н	0.15	0.41	ng/L	B130292	1300129
BioReactor 2 E	ff Hg Blk									
1307048-11	Hg	DIW	T	0.15	U	0.15	0.40	ng/L	B130292	1300129
1307048-12	Hg	DIW	D	0.15	H, U	0.15	0.39	ng/L	B130292	1300129
BioReactor 2 I	nf									
1307048-05	Hg	Influent	T	263		0.77	2.04	ng/L	B130292	1300129
1307048-06	Hg	Influent	D	30.5	Н	0.15	0.41	ng/L	B130292	1300129
BioReactor 2 I	nf Hg Blk									
1307048-07	Hg	DIW	T	0.15	U	0.15	0.41	ng/L	B130292	1300129
1307048-08	Hg	DIW	D	0.15	H, U	0.15	0.41	ng/L	B130292	1300129



Page 22 of 38 Client PM: Jay Perkins Client PO: 141391

# Accuracy & Precision Summary

Batch: B130292 Lab Matrix: Water Method: EPA 1631

Sample B130292-SRM1	Analyte Certified Reference Materia Hg	Native al (1307035	<b>Spike</b> 5, <b>NIST 1641d</b> 15.68	Result 1000x diluti 15.74	Units ion) ng/L	REC & Limi	
B130292-MS2	<b>Matrix Spike (1307048-01)</b> Hg	984.8	2525	3429	ng/L	97% 71-1	25
B130292-MSD2	Matrix Spike Duplicate (130 Hg	<b>984.8</b>	2525	3194	ng/L	87% 71-1	25 7% 24
B130292-MS3	<b>Matrix Spike (1307049-05)</b> Hg	7.39	505.1	494.8	ng/L	97% 71-1	25
B130292-MSD3	Matrix Spike Duplicate (130	<b>7.39</b>	505.1	455.9	ng/L	89% 71-1	25 8% 24



Page 23 of 38 Client PM: Jay Perkins Client PO: 141391

# Method Blanks & Reporting Limits

Batch: B130292 Matrix: Water Method: EPA 1631

Analyte: Hg

Sample	Result	Units
B130292-BLK1	0.15	ng/L
B130292-BLK2	0.20	ng/L
B130292-BLK3	0.25	ng/L
B130292-BLK4	0.21	ng/L

 Average: 0.20
 Standard Deviation: 0.04
 MDL: 0.15

 Limit: 0.50
 Limit: 0.10
 MRL: 0.40



Page 24 of 38 Client PM: Jay Perkins Client PO: 141391

## **Instrument Calibration**

Sequence: 1300129 Total Mercury and Mercury Speciation by CVAFS

Method: EPA 1631

Instrument: THG-06 Date: 02/25/2013 Analyte: Hg

Lab ID 1300129-IBL1	True Value	Result 2.41	Units pg of Hg	REC	& Limits
1300129-IBL2		2.83	pg of Hg		
1300129-IBL3		4.00	pg of Hg		
1300129-IBL4		4.24	pg of Hg		
1300129-CAL1	10.00	10.38	pg of Hg	104%	
1300129-CAL2	25.00	25.12	pg of Hg	100%	
1300129-CAL3	100.0	101.0	pg of Hg	101%	
1300129-CAL4	500.0	489.4	pg of Hg	98%	
1300129-CAL5	2500	2502	pg of Hg	100%	
1300129-CAL6	10000	9706	pg of Hg	97%	
1300129-ICV1	1568	1574	pg of Hg	100%	85-115
1300129-CCB1		6.86	pg of Hg		
1300129-CCV1	500.0	499.3	pg of Hg	100%	77-123
1300129-CCB2		4.75	pg of Hg		
1300129-CCB3		4.72	pg of Hg		
1300129-CCB4		5.34	pg of Hg		
1300129-CCV2	500.0	500.7	pg of Hg	100%	77-123
1300129-CCB5		5.63	pg of Hg		
1300129-CCV3	500.0	492.7	pg of Hg	99%	77-123
1300129-CCB6		7.52	pg of Hg		
1300129-CCV4	500.0	488.5	pg of Hg	98%	77-123
1300129-CCB7		5.88	pg of Hg		
1300129-CCV5	500.0	470.9	pg of Hg	94%	77-123
1300129-CCB8		5.49	pg of Hg		
1300129-CCV6	500.0	452.8	pg of Hg	91%	77-123
1300129-CCB9		4.99	pg of Hg		
1300129-CCV7	500.0	458.0	pg of Hg	92%	77-123
1300129-CCBA		5.30	pg of Hg		
1300129-CCV8	500.0	469.2	pg of Hg	94%	77-123
1300129-CCBB		5.41	pg of Hg		
1300129-CCV9	500.0	452.7	pg of Hg	91%	77-123
1300129-CCBC		6.44	pg of Hg		
1300129-CCVA	500.0	461.7	pg of Hg	92%	77-123
1300129-CCBD		6.88	pg of Hg		
1300129-CCVB	500.0	456.0	pg of Hg	91%	77-123
1300129-CCBE		5.17	pg of Hg		
1300129-CCVC	500.0	458.9	pg of Hg	92%	77-123
1300129-CCBF		4.42	pg of Hg		
1300129-CCVD	500.0	462.8	pg of Hg	93%	77-123
1300129-CCBG		5.15	pg of Hg		



Page 25 of 38 Client PM: Jay Perkins Client PO: 141391

## **Instrument Calibration**

Sequence: 1300129 Total Mercury and Mercury Speciation by CVAFS

Method: EPA 1631

Instrument: THG-06 Date: 02/25/2013 Analyte: Hg

True Value	Result	Units		& Limits
500.0	465.0	pg of Hg	93%	77-123
	6.13	pg of Hg		
500.0	464.5	pg of Hg	93%	77-123
	5.88	pg of Hg		
500.0	470.0	pg of Hg	94%	77-123
	5.70	pg of Hg		
500.0	494.6	pg of Hg	99%	77-123
	5.05	pg of Hg		
1568	1557	pg of Hg	99%	85-115
500.0	475.0	pg of Hg	95%	77-123
	4.94	pg of Hg		
500.0	450.4	pg of Hg	90%	77-123
	4.40	pg of Hg		
500.0	449.4	pg of Hg	90%	77-123
	4.27	pg of Hg		
500.0	455.3	pg of Hg	91%	77-123
	3.88	pg of Hg		
	500.0 500.0 500.0 500.0 1568 500.0 500.0	500.0 465.0 6.13 500.0 464.5 5.88 500.0 470.0 5.70 500.0 494.6 5.05 1568 1557 500.0 475.0 4.94 500.0 450.4 4.40 500.0 449.4 4.27 500.0 455.3	500.0 465.0 pg of Hg 6.13 pg of Hg 500.0 464.5 pg of Hg 5.88 pg of Hg 5.88 pg of Hg 5.70 pg of Hg 5.70 pg of Hg 5.05 pg of Hg 5.05 pg of Hg 1568 1557 pg of Hg 500.0 475.0 pg of Hg 4.94 pg of Hg 500.0 450.4 pg of Hg 500.0 449.4 pg of Hg 4.40 pg of Hg 500.0 449.4 pg of Hg 4.27 pg of Hg 500.0 455.3 pg of Hg	500.0 465.0 pg of Hg 93% 6.13 pg of Hg 500.0 464.5 pg of Hg 93% 5.88 pg of Hg 500.0 470.0 pg of Hg 94% 5.70 pg of Hg 500.0 494.6 pg of Hg 99% 5.05 pg of Hg 1568 1557 pg of Hg 99% 500.0 475.0 pg of Hg 95% 4.94 pg of Hg 500.0 450.4 pg of Hg 500.0 449.4 pg of Hg 500.0 455.3 pg of Hg 91%



Page 26 of 38 Client PM: Jay Perkins Client PO: 141391

# **Sample Containers**

Lab ID: 1307048-01 Sample: BioReactor 1 Inf		•	rt Matrix: Influent ble Type: Sample			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-02 Sample: BioReactor 1 Inf		•	rt Matrix: Influent ole Type: Sample			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 250 mL	<b>Lot</b> 13-0001	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-03 Sample: BioReactor 1 Inf Hg Blk		-	rt Matrix: DIW ble Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-04 Sample: BioReactor 1 Inf Hg Blk		•	rt Matrix: DIW ble Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 250 mL	<b>Lot</b> 13-0001	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-05 Sample: BioReactor 2 Inf		•	rt Matrix: Influent ble Type: Sample			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-06 Sample: BioReactor 2 Inf		•	rt Matrix: Influent ble Type: Sample			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 250 mL	Lot 13-0001	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
Lab ID: 1307048-07 Sample: BioReactor 2 Inf Hg Blk		•	rt Matrix: DIW ble Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des Container A Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler



Page 27 of 38 Client PM: Jay Perkins Client PO: 141391

# **Sample Containers**

	I <b>D:</b> 1307048-08 ple: BioReactor 2 Inf Hg Blk		-	ort Matrix: DIW ole Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des A	Container Bottle FLPE Hg-T	Size 250 mL	<b>Lot</b> 13-0001	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
	ID: 1307048-09 ple: BioReactor 2 Eff		•	ort Matrix: Effluent ple Type: Sample			cted: 02/08/2013 ived: 02/15/2013
<b>Des</b> A	Container Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler
	ID: 1307048-10 ple: BioReactor 2 Eff		=	ort Matrix: Effluent ole Type: Sample			cted: 02/08/2013 ived: 02/15/2013
Des A	Container Bottle FLPE Hg-T	Size 250 mL	<b>Lot</b> 13-0001	Preservation none	<b>P-Lot</b> n/a	рН	Ship. Cont. Cooler
	ID: 1307048-11 ple: BioReactor 2 Eff Hg Blk		•	ort Matrix: DIW ole Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des A	Container Bottle FLPE Hg-T	Size 500 mL	<b>Lot</b> 71666330 10	Preservation none	<b>P-Lot</b> n/a	рН	Ship. Cont. Cooler
	ID: 1307048-12 ple: BioReactor 2 Eff Hg Blk		•	ort Matrix: DIW ole Type: Field Blank			cted: 02/08/2013 ived: 02/15/2013
Des A	Container Bottle FLPE Hg-T	Size 250 mL	<b>Lot</b> 13-0001	Preservation none	P-Lot n/a	рН	Ship. Cont. Cooler

# **Shipping Containers**

Cooler

Received: February 15, 2013 8:50 Tracking No: 535305198721 via FedEx

Coolant Type: Ice Temperature: 1.6 °C **Description:** Cooler **Damaged in transit?** No **Returned to client?** No

Custody seals present? No Custody seals intact? No COC present? Yes

		Duke Energy Anal	CUSTODY RE			Analytical L	abora	tory	Samo	les :		سينيب				age 1			
D	uke iergy	Mail Code MGO3A	(Building 7405)	UMS#	nnn2	Matrix: OTH	IER		Origi From	ating	``` <b>`</b>	8			DISTRIBUTION ORIGINAL to LAB, COPY to CLIENT				
/ Fin	erqv.	13339 Hagei Huntersville,	N, C. 28078	Logged By.	Logged By Date & Time SAMPLE PROGRA						AM N	Ground V	vater 1	COF	Y to C	FIEW!			
		(704) 87 Fax: (704)		j i 712	<u> </u>				H pari	iking (V	ater		- marina program	UST I					
Project Name	Allen Wast	ewater - Nietering	2)Phone No:	1			28				wa	ste			,	····			
***************************************		2013 - Test Burn)	4)Fax No:	1	&C	Brooks 18 Prese	er Tem rv.:1=H	CL				$\Box$							
Client:		bin Jolly, Bill Kennedy, n Scruggs		PO	#13324	2=H_SO 4=lte	, 3≖HP <u>6=No</u>	ie ,	<u>.                                     </u>	4		4	_	4	4	2,4		4-1	
Project:	MASFFLX	6)Account:	Mail Code:	Broo	oks Ranc		\$8	<b>8</b> //		Hg 1631 (otal and filtered V. Brand	als + Hg 245.7 (ICP), Se (IMS) filtered	ASC	152	Ė		NO3/NO2		l	
Oper. Unit:		9)Process:	10)Activity (D:	PO#	141391	omplete all	(% Analys	\$√		V bas	(IMS) filte	>		6.	e X	Ž			
	AS00	BEXHABS		J i		ided areas.		1		W Po	15 88 18 18	atio	W A	otal	Sulfate. Dionex	ag			zaamethich/st
				PRI		***************************************	1	4	8	otal a	*   £	Speciation,	oriati	alkalinity, total (4.5), pH V Prism	de, t	Nittrate-nimite,			
AB USE ONLY	Se Speciation 9	ottie		PO#	144725	*	Comp	<sup>th</sup> Grab	ğ	1631	Metals Mn (ICF	S	- P		Chloride, Bromide,	Nate			i
11.	aı	•	escription or ID	Date	Time	Signature	Į₽̃	<u> </u>	븨	+		-		<u> </u>	100	++		$\neg  au$	i
"Lab 10 1 1301 > 3014	<u></u>		Purge Eff			Crais Mc Hugh			1	++	1** 1		+ + -		<b>†</b>	+ +	11		2.
130036105			Q Tank			Crais Millings			_	+	1** 1	-	+	1	$\vdash$	$+ \uparrow$			ĺ
1300 36 Uk	- tris	BioRe	eactor 1 Inf			Craig Mithugh			$\dashv$	1 1	4		+		<b> </b>				
17781111		BioReac	tor 1 Inf Hg Blk		-	Crais Miklingh	+		$\dashv$	1	1	1 1		1					-
113002660	ž		eactor 2 Inf		0975	Craix Welley	┪		-	1	-	Ť	1						1
)302344	8		tor 2 Inf Hg Blk		0827	Cray Mitted	-		+	1	1	1 1		1	1			<u> </u>	-
1300310	<b>å</b>		eactor 2 Eff	······································	0830	Craig McKlugh Craig McKlugh	+-		1	i						44			4
13003151	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	BioReac	tor 2 Eff Hg Blk	<u> </u>	0832	way mining	1	T		1							<u> </u>	$\vdash$	4
			ter Blank	7-8-1	0900	Craix M. Hugh						1	44		-	_		+	-
327031,72			ICI DIGIIN		1	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~						_		·	+	_	$\vdash \vdash$	++	1
	2				<b>†</b>						1-1	-						廿十	1
			······································					1	$\sqcup$	L_			Filter n kit b			the field		7 20	<u> </u>
	3										X	enur	TI KILL		*****		***		<u> </u>
I) Relinguished By	Customer to sign	ß date below - fill out from left t Date/T	o right. une	2) Accepted I			4838	Date	Time	307	7,		¥.	22	Requ	ested 7	Turnaro	und	
				4) Accepted		244		Date	Clime.	201		***	Lustonies, incomorgante please indicate desired furnaround.		21 Da	ys	_x		
3) Relinquished By		Date/T	uug			and the second s	نيون نوندون بي		Time	والمستعرب		Can			*7 De	nve			
5)Relinguished By		Date(T	ime:	6)Accepted E	y:								( Z		5	. In growing to		uus Yiittiiliilii Niistaanuuu y	
7)Relinguished By		Dategr	line	8)Accepted E	ly.			DaM	/Firne			1 2	1.69		Ven	ior 14 D	iaysX		
<i>/</i> 5/2/3	<i>?</i>		113 1300	10) Seal/Loc	Opened By	0 -11	7	- 9an	Time	08	<u> </u>	1	8 # B	*Other	Ad	d, Cost	Will Appl	y	
b)Seal/Looked 99	Maria	27	7/3 /300			OU WILL			13	Og	フロ						8-1	3	
11)Seal/Locked By		Date/1		12)Seal/Lock	Opened By	en e						1	200						



NC Certification No. 402 SC Certification No. 99012 NC Drinking Water Cert No. 37735 VA Certification No. 1287

DoD ELAP Certification No. L2307

Gase Marrative

02/18/2013

Duke Energy Corporation Jay Perkins 13339 Hagers Ferry Road Huntersville, NC 28078 Project: Allen WW - Nietering (January 2013-Test Burn)

Project No.: J13020235

Lab Submittal Date: 02/12/2013 Prism Work Order: 3020295

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

**VP Laboratory Services** 

Reviewed By

Pegg 7 Kendall

### Data Qualifiers Key Reference:

HT Sample received and analyzed outside of the hold time.

BRL Below Reporting Limit
MDL Method Detection Limit
RPD Relative Percent Difference

\* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and

reporting limit indicated with a J.



## Sample Receipt Summary

02/18/2013

Prism Work Order: 3020295

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
2013003664/FGD Purge Eff	3020295-01	Water	02/08/13	02/12/13
2013003666/BioReactor 1 Inf	3020295-02	Water	02/08/13	02/12/13
2013003668/BioReactor 2 Inf	3020295-03	Water	02/08/13	02/12/13
2013003670/BioReactor 2 Eff	3020295-04	Water	02/08/13	02/12/13

Samples received in good condition at 1.6 degrees C unless otherwise noted.





Project: Allen WW - Nietering (January 2013-Test Burn) Project No.: J13020235 Sample Matrix: Water

Client Sample ID: 2013003664/FGD Purge Eff Prism Sample ID: 3020295-01 Prism Work Order: 3020295

Time Collected: 02/08/13 07:30 Time Submitted: 02/12/13 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	6.6 HT	pH Units			1	*SM4500-H B	2/13/13 11:15	JAB	P3B0258
Total Alkalinity	41	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0288
Carbonate Alkalinity	BRL	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0289
Bicarbonate Alkalinity	41	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0290





Project: Allen WW - Nietering (January 2013-Test Burn) Project No.: J13020235 Sample Matrix: Water

Client Sample ID: 2013003666/BioReactor 1 Inf

Prism Sample ID: 3020295-02 Prism Work Order: 3020295 Time Collected: 02/08/13 08:20 Time Submitted: 02/12/13 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
рН	7.5 нт	pH Units			1	*SM4500-H B	2/13/13 11:15	JAB	P3B0258
Total Alkalinity	87	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0288
Carbonate Alkalinity	BRL	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0289
Bicarbonate Alkalinity	87	ma/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0290





Project: Allen WW - Nietering (January 2013-Test Burn) Project No.: J13020235 Sample Matrix: Water

Client Sample ID: 2013003668/BioReactor 2 Inf

Prism Sample ID: 3020295-03 Prism Work Order: 3020295 Time Collected: 02/08/13 08:25 Time Submitted: 02/12/13 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	7.2 нт	pH Units			1	*SM4500-H B	2/13/13 11:15	JAB	P3B0258
Total Alkalinity	260	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0288
Carbonate Alkalinity	BRL	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	5 JAB	P3B0289
Bicarbonate Alkalinity	260	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0290





Project: Allen WW - Nietering (January 2013-Test Burn) Project No.: J13020235 Sample Matrix: Water Client Sample ID: 2013003670/BioReactor 2 Eff

Prism Sample ID: 3020295-04 Prism Work Order: 3020295 Time Collected: 02/08/13 08:30 Time Submitted: 02/12/13 14:45

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	7.3 нт	pH Units			1	*SM4500-H B	2/13/13 11:15	JAB	P3B0258
Total Alkalinity	260	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0288
Carbonate Alkalinity	BRL	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	5 JAB	P3B0289
Bicarbonate Alkalinity	260	mg/L	5.0	0.59	1	*SM2320 B	2/14/13 10:15	JAB	P3B0290



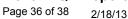
Project: Allen WW - Nietering (January

2013-Test Burn) Project No: J13020235 Prism Work Order: 3020295

Time Submitted: 2/12/2013 2:45:00PM

### **General Chemistry Parameters - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P3B0258 - NO PREP										
LCS (P3B0258-BS1)				Prepared	& Analyze	d: 02/13/1	3			
pH	6.87		pH Units	6.880		100	99-101			
Duplicate (P3B0258-DUP1)	Sourc	e: 3020295	5-04	Prepared	& Analyze	d: 02/13/1	3			
pH	7.33		pH Units		7.32			0.1	10	
Batch P3B0288 - NO PREP										
Blank (P3B0288-BLK1)				Prepared	& Analyze	d: 02/14/1	3			
Total Alkalinity	BRL	5.0	mg/L							
Blank (P3B0288-BLK2)				Prepared 6	& Analyze	d: 02/14/1	3			
Total Alkalinity	BRL	5.0	mg/L							
LCS (P3B0288-BS1)				Prepared 6	& Analyze	d: 02/14/1	3			
Total Alkalinity	250	5.0	mg/L	250.0		100	90-110			
LCS (P3B0288-BS2)				Prepared 6	& Analyze	d: 02/14/1	3			
Total Alkalinity	250	5.0	mg/L	250.0		100	90-110			
LCS Dup (P3B0288-BSD1)				Prepared 6	& Analyze	d: 02/14/1	3			
Total Alkalinity	258	5.0	mg/L	250.0		103	90-110	3	200	
LCS Dup (P3B0288-BSD2)				Prepared 6	& Analyze	d: 02/14/1	3			
Total Alkalinity	254	5.0	mg/L	250.0		102	90-110	2	200	
Duplicate (P3B0288-DUP2)	Source	e: 3020295	5-04	Prepared	& Analyze	d: 02/14/1	3			
Total Alkalinity	262	5.0	mg/L		257			2	20	





Project: Allen WW - Nietering (January

2013-Test Burn) Project No: J13020235 Prism Work Order: 3020295

Time Submitted: 2/12/2013 2:45:00PM

### **General Chemistry Parameters - Quality Control**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P3B0289 - NO PREP										
Blank (P3B0289-BLK1)				Prepared	& Analyze	ed: 02/14/1	3			
Carbonate Alkalinity	BRL	5.0	mg/L							
Duplicate (P3B0289-DUP1)	Source	ce: 3020295	5-04	Prepared	& Analyze	ed: 02/14/1	3			
Carbonate Alkalinity	BRL	5.0	mg/L		BRL				20	
Batch P3B0290 - NO PREP										
Blank (P3B0290-BLK1)				Prepared	& Analyze	ed: 02/14/1	3			
Bicarbonate Alkalinity	BRL	5.0	mg/L							
LCS (P3B0290-BS1)				Prepared	& Analyze	ed: 02/14/1	3			
Bicarbonate Alkalinity	250	5.0	mg/L	250.0		100	90-110			
LCS Dup (P3B0290-BSD1)				Prepared & Analyzed: 02/14/13						
Bicarbonate Alkalinity	254	5.0	mg/L	250.0		102	90-110	2	200	
Duplicate (P3B0290-DUP1)	Source	ce: 3020295	5-04	Prepared	& Analyze	ed: 02/14/1	3			
Bicarbonate Alkalinity	262	5.0	mg/L		257			2	20	



Metals= > 300/100

Į. Ų. Ĉ. 

FRANCE = B, Cr

10 May (4)

Ingla on these I somplet

3020295

Page 37 of 38 2) Cilent: 8)Oper. Unit 5)Project: 1)Project Name LAB USE ONLY 1) Relinquished 1130X3U 300366 11/14/10 Ron Laws, Robbin Jolly, Bill Kennedy, Don Scruggs Se Speciation Bottle MASFFLX AS00 Allen Wastewater - Nietering (January 2013 - Test Burn) ō 6)Account: **Duke Energy Analytical Laboratory** CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM BEXHABS Mail Code MGO3A2 (Building 7405) <sup>13</sup>Sample Description or ID Huntersville, N. C. 28078 13339 Hagers Ferry Rd BioReactor 1 Inf Hg Blk BioReactor 2 Eff Hg Blk BioReactor 2 Inf Hg Bk Fax: (704) 875-4349 (704) 875-5245 BioReactor 2 Eff BioReactor 1 Inf BioReactor 2 Inf FGD Purge Eff Date/Time Filter Blank EQ Tank 4)Fax No: Mail Code: 10)Activity ID: 12) Seal/Lock Opened By 2-8-13 0740 28-13 2.8-13 2-8-13/0825 2-8-13 0822 28.13 2-8-13 0730 2-8-13 0832 Seal/Lock Opened By 2-8-12 Date PRISM PO#144725 PO#141391 **Brooks Rand** AS&C PO#133241 0827 0820 Time 0900 0830 Crows Mc Bush Craix Mitsual Crows M. Klush ravie Mithuet Craix Mr blueft omplete all rais Mikun roug Millust Signature ded areas. Analytical Laboratory Use Only Matrix OTHER Milan Milleret Cooler Temp (C s 15préserv:1=HC) 2=H,SO, 3=HNO 13 0808 5=None <sup>7</sup>Comp. <sup>16</sup>Analyses 2/12 Required 8Grab Oate/Time Date/Time Date/Time TDS, TSS Drinking Water SAMPLE PROGRAM 3072 Hg 1631 total and filtered V\_Brand Metals + Hg 245.1\*\* \* ؎ Mn (ICP), Se (IMS) filtered ↔ \_ Se, Speciation, V\_ASC \_ NPDES \_\_\_\_\_ Carbonate alkalinity, bicarbonate alkalinity, RCRA alkalinity, total (4.5), pH <sup>22</sup>Requested Turnaround V Prism 21 Days \*7 Days Vendor 14 Days Chloride, Sulfate, Add. Cost Will Apply ORIGINAL to LAB, <sup>19</sup>Page 1 of 2 DISTRIBUTION COPY to CLIENT 2-28-13 Bromide, - Dionex Nittrate-nitrite, C\_NO3/NO2 8 62 14 44 1.6

Page 9 of 9

		Duke Energy Anal	ytical Laboratory			Anal	lytical L	abor	atory	Use	Onl	у				1	90	1 060	
<u>Du</u>	ıke ergy	Mail Code MGO3A 13339 Hage	2 (Building 7405)	LIMS#	0202	25 Matr	ix: OTI	HER		Ori	mples iginatir	19	N S	C		DI	STRIE	1 of 2 3 0 7 9 9 1 3	
<b>En</b>	ergy	Huntersville, (704) 87 Fax: (704)	N. C. 28078 5-5245	Logged By	-	Date & Time.	2/13	08	08		om SAMPL Drinking				Ground Water PDES			L to LAE	
Project Name		tewater - Nietering 2013 - Test Burn)	2)Phone No:	]			Cool	2 g ler Ten	p (C)				Was	te	RCRA				
) Client:	Ron Laws, Rob	bin Jolly, Bill Kennedy, n Scruggs	4)Fax No:	The second secon	5&C )#13324	Brooks		rv.:1=h	HCL NO <sub>3</sub>	4	4	3	3	4	4	4	2,4		
)Project:	MASFFLX	6)Account:	Mail Code:	Bro	oks Ran	d		9	N		-	*	filterec	1SC	÷		NO2		
s)Oper. Unit:	AS00	9)Process: BEXHABS	10)Activity ID:		‡141391	omplete		Analyse	Required		filtered V_Brand	245.1**	Se (IMS) fil	Speciation, V_ASC	calinity, calinity, (4.5), p	ite, nex	C_NO3/NO2		
		T DEXI INDO		PRI	SM	ided	areas.	T		0	and	Hg	1000	ciatio	ite all total	Sulfate, - Dionex	itrite,		
LAB USE ONLY	Se Speciation B			PO#	144725			17Comp.	18 Grab	108, 188	Hg 1631 total	Metals +	Mn (ICP),	Se, Spec	Carbonate alkalinity, bicarbonate alkalinity, alkalinity, total (4.5), pH - V_Prism	Chloride, Bromide,	Nittrate-nitrite,		
11Lab ID			escription or ID	Date	Time	Craig Mc L		11,	\$ 1	1	Ĭ	1**	1	1	1	1			
013003664			Purge Eff Q Tank			Crais Mc				1		1**	•						
13003665			actor 1 Inf	THE RESERVE OF THE PARTY OF THE	0820	Craig Mck					1	1	1	1	1				
130036 lela			or 1 Inf Hg Blk	Market Branch Br	0822	Crais Me	Husch				1								
1303467			eactor 2 Inf	Market Services	0825	Crais Mr		100			1	1	1	1	1	1/2			
013003648 013003649			or 2 Inf Hg Blk	COURSE HANDSON	0827	Crais Me					1								
013003470			eactor 2 Eff	2-8-13		Crais Me					1	1	1	1	1	1			
230301			or 2 Eff Hg Blk	THE RESERVE AND PARTY OF THE PA	0832	Craig Me					1								
0130081,72		Fill	er Blank	2-8-17	0900	Craiz M.	blugh					1	1						
															Filter Fe and Mi	n in the	field		
Š			diaba.									F	letu	ırn l	kit to Robb	in Jo	lly	F.4	2/1.
1) Relinquished By	Customer to sign 8	date below - fill out from left to Date/Tir		2) Accepted B	1 Xai	us		ک ن		113	107	26		onnd.	<sup>22</sup> Re	quest	ed Tu	ırnarou	nd
3) Relinquished By 5)Relinquished By	Knox	2-/2-/3 Date/Tir	1010	4) Accepted B	1-14	Po-	2	1	Date/Ti	3	10	10		r, IMPORTANT! desired turnarou	21	Days Days			
7]Relinguished By	w	DaterTii 2	ne/13 1300	8)Accepted By					Date/Fi					e desire	V	endor 1	14 Day	s _X_	
9)Seal/Loeked By	an		13 1300	10) Seal/Lock	Opened By				Date/Fi	me				Customer, e indicate o	*Other	Add. C	ost Wi	II Apply	
11)Seal/Locked By		Date/Fil		12)Seal/Lock	Opened By			****	Date/Ti	me			1	Cus Please inc		0	0	8-1.	2